IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. – 36. (Cancelled)

37. (New) A plasma processing apparatus comprising:

a vacuum processing chamber,

a pair of plate electrodes opposite to each other, one of the electrodes being used also as a sample table capable of holding a sample containing an insulator film,

a gas introducing means capable of introducing a fluorine-containing etching gas into the vacuum processing chamber, and

a plasma generating means for forming said introduced gas into a plasma, wherein:

an electrode cover comprising a material containing Si or C is disposed at the other of the pair of plate electrodes,

a pressure in the environment between the pair of flat plate electrodes is set to 0.5 Pa to 4.0 Pa, and

a gap between the plate electrodes is set to 8 mm to 50 mm.

38. (New) A plasma processing apparatus comprising:

a vacuum processing chamber,

a pair of plate electrodes opposite to each other, one of the electrodes being used also as a sample table capable of holding a sample containing an insulator film,

a gas introducing means capable of introducing a fluorine-containing etching gas into the vacuum processing chamber, and

a plasma generating means for forming said introduced gas into a plasma, wherein:

the sample has a diameter of 300 mm or more,

an electrode cover comprising a material containing Si or C is disposed at the other of the pair of plate electrodes,

a pressure in the atmosphere between the pair of flat plate electrodes is set to 0.5 Pa to 4.0 Pa,

a high frequency electric power of 30 MHz to 200 MHz is applied to the other of the electrodes, and

a gap between the plate electrodes is set to 8 mm to 50 mm.

39. (New) A plasma processing apparatus according to claim 37 or 38, wherein the gas introducing means has a gas diffusion plate, and the electrode cover situated downstream of the gas diffusion plate has fine plural apertures.

40. (New) A plasma processing apparatus according to claim 37, or 38, wherein a bias is further applied in addition to the high frequency electric power to the other of the electrodes.

41. (New) A plasma processing apparatus according to claim 38, wherein the gap between the pair of plate electrodes is et to 30 mm or more.

42. (New) A plasma processing apparatus according to claim 37 or 38, wherein a susceptor cover is situated near the sample.

43. (New) A plasma processing apparatus according to claim 42, wherein the insulator between the susceptor cover and the sample table has a thickness of 0.5 mm to 5 mm.

44. (New) A plasma processing apparatus comprising:

a vacuum processing chamber,

a pair of plate electrodes opposite to each other, one of the electrodes being used also as a sample table capable of holding a sample containing an insulator film,

a gas introducing means capable of introducing a fluorine-containing etching gas into the vacuum processing chamber, and

a plasma generating means for forming said introduced gas into a plasma, wherein:

an electrode cover, including means for removing fluorine, is disposed at the other of the pair of plate electrodes,

a pressure in the environment between the pair of flat plate electrodes is set to 0.5 Pa to 4.0 Pa, and

a gap between the plate electrodes is set to 8 mm to 50 mm.

45. (New) A plasma processing apparatus according to claim 44, wherein said means for removing fluorine comprises the electrode cover being formed to include Si or C.